

21. SUCCESSFUL ARTIFICIAL BREEDING OF *LISSEMYS PUNCTATA GRANOSA* (SMITH)\*

INTRODUCTION

The Southern Flap-shell turtle — *Lissemys punctata granosa* (Smith) occurs throughout peninsular India and Sri Lanka. Around Madras this turtle occurs in fairly large numbers and is usually hunted for food by the locals.

Deraniyagala (1953) reports that in *Lissemys punctata ceylonensis*, which he believes as barely seperable from *Lissemys punctata granosa*, breeding maxima are towards the commencement and end of the year. On November 1st, 1980, just after the rains, Chockulingam, an Irula tribal employee at the Madras Snake Park, took me and two of my colleagues on a field survey off the city limits, south of Taramani. Just west of Taramani Radio Station, while walking on the beaten track along the fence of a farm house, Chockulingam pointed to a raised mound of fine, loose, wet sand nearly one foot high. The mound was surrounded by a thick growth of bushes and grasses, receiving filtered sunlight. It was the nest of the Southern flap-shell turtle, *Lissemys punctata granosa*.

MATERIALS AND METHODS

*Nest measurements:* The nest was opened by us to take back the eggs. It was dug at an angle to the ground surface.

\* Dr. Robert Webb in his paper 'The identity of *Testudo punctata* Lacepede, 1788 (Testudines, Trionychidae) Webb, 1980 has redescribed the nomenclatural and taxonomic history of that holotype. He has renamed the yellow spotted *Lissemys punctata punctata* of North India as *Lissemys punctata andersoni* and the Southern *Lissemys punctata granosa* as the actual *Lissemys punctata punctata*.

The nest depth to the first exposed eggs was 8 cm. The nest chamber measured 8 cm. in diameter. The total depth of the nest was 12 cm. There were 8 eggs in the nest. The eggs were still moist with mucus and were estimated to be 3 days old at the most.

Deraniyagala (1953) reports that *Lissemys punctata ceylonensis* lays 2-6 eggs within a few weeks of one another. Malcolm Smith (1931) reports that 10-12 eggs are laid at a time. Gunther (1864) records a report by Dr. Kelaart about a female *L. p. ceylonensis* which laid three eggs of about 1" diameter, with a hard, calcareous shell.

*Egg measurements:* The eggs were perfectly spherical, hard shelled. They measured as follows :

Diameter: 1) 25.9 mm, 2) 26.6 mm, 3) 26.1 mm, 4) 26.6 mm, 5) 26.5 mm
Weight: 1) 11.0 gm, 2) 12.5 gm, 3) 11.0 gm, 4) 11.0 gm, 5) 12.0 gm
Diameter: 6) 26.4 mm, 7) 26.8 mm, 8) 27.5 mm.
Weight: 6) 11.0 gm, 7) 12.0 gm, 8) 11.5 gm.

According to Deraniyagala (1953) *Lissemys p. ceylonensis* eggs measured 30 mm-33 mm and weighed 17 gm-19.5 gm.

*Incubation:* The eggs were brought to the Snake Park laboratory to be incubated. A plastic shoe box filled with about 8 cm earth and 3 cm air space was used as an incubator. The eggs were placed completely covered with the earth, the box was also kept covered. Moisture on the lid and sides of the box was wiped dry daily.

On May 8th, 1981, 6 months after egg collection, one of the eggs was opened. The

MISCELLANEOUS NOTES

embryo within was fully formed with a large amount of yolk. It was alive and pulsating and had a carapace length of 20 mm and it weighed 4 gm, the egg before opening weighed 9 gm.

On July 6th, two eggs were opened and found to be infertile. On 20th July two more eggs were opened. The turtles were full term and ready to hatch. On removing the covering thin transparent membrane they wriggled vigorously. The yolk sac was almost completely withdrawn in both turtles. On 22nd July another egg was opened and on 24th July the last two eggs were opened after an incubation period of nearly 9 months. The incubation temperatures were 32.2°C nest; 32.6°C air.

As related to this incubation period, in *Testudo elegans* the incubation period is thought to be 4-5 months—Minton in Prakash (1971). In *Testudo horsfieldi* (Gray) the incu-

bation time is 76 days. Roberts (1975).

In *Trionyx ferox* (Schneider) the incubation period is 56 days — Lardie (1973).

*Hatching measurements:*

- 
1. R. Lardie: CL 39 mm CB — PL 32 mm —  
*Trionyx ferox*

---

  2. Deraniyagala: CL 44 mm CB 35 mm  
PL 41 mm — — Wt. 10 gm  
*L. p. ceylonensis*

---

  3. M.S.P. 1981: CL 42 mm CB 40 mm  
PL 39 mm SH 15 mm Wt. 8.2 gm.  
*L. p. granosa*
- 

CL—Carapace length, CB—Carapace breadth, PL—Plastron length, SH—Shell height

At present the five hatchlings are being fed on earthworms, *Rhacophorus maculatus* tadpoles and wasp and beetle grubs.

J. VIJAYA

RESEARCH ASSOCIATE,  
MADRAS SNAKE PARK,  
GUINDY DEER PARK,  
MADRAS-600 022,  
August 10, 1981.

REFERENCES

- DERANIYAGALA, P. E. P. (1953): A Colored Atlas of Some Vertebrates from Ceylon. Tetrapod Reptilia. Vol. 2, pp. 26.
- GUNTHER, A. C. L. G. (1864): The Reptiles of British India, pp. 45.
- LARDE, R. L. (1973): Notes on eggs and young of *Trionyx forex* (Schneider). *J. Herpetology* 7 (4): 377-78.
- PRAKASH, I. (1971): *Testudo elegans* in Western Rajasthan. *J. Bombay nat. Hist. Soc.* 68 (1): 273-274.
- ROBERTS, T. J. (1975): A note on *Testudo horsfieldi* (Gray), the Afghan tortoise or Horsfield's four-toed tortoise. *ibid.* 72 (1): 206-208.
- SMITH, M. A. (1931): The Fauna of British India, Reptilia and Amphibia, Vol. 1, pp. 185.
- WEBB, ROBERT G. (1980): The identity of *Testudo punctata* Lacepede, 1788 (Testudines, Trionychidae). *Bulletin of the Museum of Natural History of Paris* 4e ser., 2, Section A, no. 2: pp. 547-557.